

Political Cycles and Elections in Russian Regions*

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Abstract

Ruling party outcomes in national-level elections in Russian regions are crucial to the likelihood of regional governors to be re-appointed for the next term. Delivering satisfactory results may have different importance to a governor depending on the stage of his term at which elections are held. If elections are held close to the expiration of a governor's current term, the results are likely to be pivotal to his further political career. In this paper, we exploit variation in the starting dates of Russian regional governors' terms of office and show that winning margins for a pro-government party or candidate in national elections in Russian regions are higher when elections are held closer to the expiration of a regional governor's term. We then implement several exercises to identify the source of the additional votes for pro-government candidates.

Keywords: political cycle, elections, Russia

JEL-Classification: D72, P26

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1. Introduction

It has been well established that under the Russian system of appointment of regional governors by the president which existed from 2004 till 2012, results of the ruling party or Kremlin-backed presidential candidate in national-level elections in different regions of Russia are crucial to the likelihood of a governor being re-appointed for the next term. Reuter and Robertson (2012) find that while governors' loyalty to the president and, more specifically, their ability to mobilize votes for the ruling party, have a strong impact on appointment decisions, good governance, measured as regional economic development, plays a limited role in appointments. This finding is confirmed by Reisinger and Moraski (2013), Gelman (2008), Gelman (2010), as well as by the recent study by Rochlitz (2016). In his earlier work, Rochlitz (2014) finds a strong positive relationship between electoral results of the president and the ruling party in a region and the scale of the involvement of government officials in illegal corporate raiding in this region, arguing that regional officials are allowed to participate in illegal financially rewarding activities in exchange for the ability to deliver satisfactory electoral results.

Delivering satisfactory results at particular national elections may have different value to a governor, depending on the stage of his term at which the elections are held. Suppose, the president assesses a governor based on how he handles tasks the governor faces over his term with higher weights on the results of more recent tasks. In Russia, delivering good results for the ruling party in national elections is one of such tasks. Suppose further that the president decides whether to re-appoint the governor for another term based on this assessment. Then, other things being equal, the later national elections are held over the governor's term the higher their effect on the governor's assessment by the president at the moment of the re-appointment decision. Therefore, if elections are held close to the expiration of a governor's current term, the results of the ruling party or candidate in the national level elections are likely to be pivotal to the governor's further career, while if the elections are held in the middle of the term, they might not be as important since the governor still has time to prove his "effectiveness" to the president.

If the importance of particular elections has different values for a governor at different stages of his term, there should be a systematic pattern in the governor's pre-election activity and, as a result, in voting outcomes which can be explained by regional political cycles. In this paper, exploiting variation in the starting dates and length of Russian regional governors' terms in office, we first test the hypothesis that electoral results, measured as winning margins of pro-government party or candidate in national elections in Russian regions are higher when elections are held closer to the expiration of a regional governor's term. Our analysis provides strong evidence for this hypothesis: the ruling party or candidate obtains up to 6 additional percentage points in its victory margin in elections held 6 months before the expiration of a governor's term than in elections held two years prior the end of the term.

Then we try to understand the source of such an increase in victory margins, and test several potential explanations. Our first hypothesis is that the driving force of the discovered result is higher turnout of the ruling party supporters arising from mobilization efforts of governors (Frye, Reuter, & Szakonyi, 2014, 2015). If governors, when approaching their term expiry date, use additional resources to stimulate turnout among potential ruling candidate supporters such as government employees, we should observe an increase in overall turnout similar to the increase in victory margin. We find some evidence for this hypothesis, but show that additional turnout observed in regions where governors are about to finish their terms cannot fully explain additional votes for the ruling party of presidential candidates, and thus there must be other reasons for the discovered pattern.

Since it is well established that from the beginning of the 2000s, electoral fraud had been a widespread phenomenon in Russia (Enikolopov, Korovkin, Petrova, Sonin, & Zakharov, 2013; Lukinova, Myagkov, & Ordeshook, 2011; Moser & White, 2017; Myagkov, Ordeshook, & Shakin, 2009; Skovoroda & Lankina, 2017; Treisman, 2009), we further conjecture that the found increase in victory margins for the ruling candidates may come not from mobilization of voters but from electoral manipulations implemented on the regional level. To test this hypothesis, we use two distinct regional level measures of fraud to check whether there is any notable effect of the approaching of the term expiry date on the degree of electoral manipulations. However, for both measures we do not find any effect.

Our final potential explanation is that a governor may put forth efforts to increase region's performance in publicly valued sectors or get involved into a political budget cycle¹, and thus gain additional support from the population, which may positively influence support of the ruling party or candidate in national elections. Specifically, governors may try to get extra votes affecting voters' income through transfers, salaries, etc. In the final section of the paper, we use several regional level measures of voters' income to test this hypothesis, but again do not find convincing evidence in favor of this explanation.

2. Background and Data

There are 83 constituent entities ("federal subjects", regions) in Russia. Since 1996, following the decision of the Constitutional Court of Russia, governors (gubernators) of all the federal subjects had to be directly elected by population. At the end of 2004 the President of Russia, Vladimir Putin, proposed a reform that abolished direct gubernatorial elections: since that time regional governors have been appointed by the president. Though formally the new procedure assumed that the president just nominates a candidate for governor while the regional parliament can approve or reject the candidate, there was no single case since

¹A well-established phenomenon in which opportunistic politicians systematically adjust public policies prior to elections to attract a higher number of votes. Cycles may take a form of increase in public expenditures, change of the composition of expenditures towards more visible projects, and even release of overly optimistic economic forecasts.

2004 when the parliament of a region did not approve a presidential nominee. The reform was approved by the Parliament of Russia ("State Duma") in December 2004, and the last direct elections took place in January 2005. Because the reform assumed the replacement of elected governors after expiration of their terms, and the date of expiration varied significantly across the regions, the full replacement of elected governors took about five years. The first appointed governor took office in February 2005, while the term of the last elected governor expired in December 2009, and since that time all the governors were appointed until October 2012. The variation in the dates of gubernatorial appointments across the regions can be mainly explained by differences in local legislation that allowed for different term lengths (usually four or five years) as well as a high degree of freedom for regions in setting the dates of gubernatorial elections in the past. Because of this, we believe that the variation in the dates of governors' appointment and, thus, in the dates of the expiration of their term across regions can be considered exogenous. Since the reform was adopted and till the moment the direct elections had been returned, there were four national level elections in Russia, two parliamentary (December 2, 2007 and December 4, 2011) and two presidential (March 2, 2008 and March 4, 2012).

To perform our main analysis, where we explore the relationship between timing of national elections in Russia with respect to regional governors' terms of office and election results of the ruling party or presidential candidates, we first use precinct and regional level electoral results of the 2007 and 2011 Russian parliamentary elections, and the 2008 and 2012 Russian presidential elections which come from Central Election Commission of the Russian Federation (www.cikrf.ru). Second, we use regional level data on economic and demographic characteristics of the Russian regions, including per capita gross regional product (GRP), consumer price index, unemployment rate, share of resource extraction industries in GRP, urbanization rate, share of people leaving below the poverty line, share of retired people, etc. This data comes from Russian Federal State Statistics Service (www.gks.ru). We also use data on regional governors' characteristics such as age, length of in-office tenure, background, etc., taken from open sources such as governors' web pages and on-line media. In the end, we have a panel which consists of 83 regions over 4 elections. After adjusting for missing observations, we are left with 313 observations. Figure A1 of the Appendix presents histograms of main electoral statistics and variables of interest.

For our further analysis, where we look at the potential mechanisms through which regional Russian governors may influence the results of the national elections in their regions, we need regional level measures of electoral fraud and individual income. We use two fraud measures based on work by Moser and White (2017) and Kobak, Shpilkin, and Pshenichnikov (2016) (see Section 4 for the details). To construct a measure of individual income, we use the Russia Longitudinal Monitoring Survey - Higher school of Economics (RLMS-HSE)². The

²Source: "the Russia Longitudinal Monitoring survey, RLMS-HSE", conducted by the National Research University Higher School of Economics and ZAO "Demoscope" together with Carolina Population Center,

survey covers the 1994–2015 period and available for 31 Russian regions for the period of our interest (i.e. 2006–2012). Among other variables, it contains data on household-level income per family member (see Section 4 for the details of the measure we use for our analysis). The survey is representative on the national level, and three regions (Moscow city, Moscow region and St. Petersburg city) are representative on sub-national level. No other region is representative on sub-national level.

3. Main Analysis

Estimation Strategy

We first want to test whether shorter time until the expiration of terms, and hence until re-appointment decision, makes governors more likely to signal their loyalty through delivering better election results during national elections. Specifically, we test the hypothesis that the approaching of the expected expiration date of the term of a regional governor influences results of the ruling party/Kremlin-backed presidential candidates, to which we further refer as "favorites", in national elections in a corresponding region. For this purpose, we want to estimate the following panel data model (1) using fixed effects estimator:

$$VoteShare_{it} = \alpha_i + \alpha_t + \beta_1 Time_{it} + \beta_z Controls_{it} + u_{it}, \quad (1)$$

where $VoteShare_{it}$ is the difference between vote share of a "favorite" ("United Russia" in the 2007 and the 2011 parliamentary elections, Dmitriy Medvedev in the 2008 presidential elections, and Vladimir Putin in the 2012 presidential elections) received in region i in elections in year $t \in \{2007, 2008, 2011, 2012\}$ and overall country level vote share received in the corresponding elections. We use the difference between actual vote shares and country averages to make comparable the results of parliamentary and presidential elections where the results of favorites are systematically different³. $Time_{it}$ is the number of month in office the governor of region i is left with at the moment of national elections in year t . For instance, if in March 2012, when the 2012 presidential elections were held, the governor of region i had 3 more months in office, i.e. expected end of his term was in June 2012, $Time_{i,2012} = 3$. $Controls_{it}$ are other control variables for regional, governor's and elections' characteristics; α_i is a time-invariant regional fixed effect, α_t is time dummy, and u_{it} is the error term.

We test different alternative functional forms for $Time$ to account for potential non-linear relationship between $Time$ and the dependent variable $VoteShare$. For this purpose, we first include polynomials of $Time$ up to the third degree. Second, to verify the robustness of the timing effect further, we split governors' terms into 10 equally spaced time periods for every 6 months and directly control for them with dummy variables. A dummy $TimeX_{it}$ ($X \in [0, 9]$) equals 1, if at the moment of national elections in year t the number of month

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³In presidential elections, both turnout and a winner's vote share are higher.

the governor of region i was left in office with is between $6X$ and $6(X + 1)$. That is, for the March 2012 elections for the region where a governor's term expires in June 2012, the dummy for the period 0, $Time0_{i,2012}$, will be 1, while the dummies of all the other periods will be 0.

$Time_{it}$ (time dummies in the alternative specification) is our main variable of interest. As discussed above, variation in this variable comes from the fact that the dates of governors' expiration of their terms across Russian regions vary greatly due to historical reasons as well as differences in regional electoral legislation. Due to the nature of the variation, it could be considered exogenous to the dependent variables used throughout the analysis, which makes identification of the effects of interest possible.

To further explore the relationship between timing of national level elections with respect to regional political cycles, we allow the effect of interest to vary across different levels of turnout. Our hypothesis is that in regions with relatively high turnout governors are likely to have more power over the electorate and thus the effect of interest should be more vivid. To account for such a possibility, we allow our main explanatory variable $Time$ to interact with regional turnout. Nevertheless, we should treat the results from such a regression with care. As discussed above, Russian elections in the analyzed period were subject to electoral manipulations. Since a number of popular fraud techniques such as ballot stuffing and vote buying increase both turnout and vote share of the manipulating candidate, a regression that has vote share as a the dependent variable and turnout as an explanatory variable may suffer from an omitted variable bias. Therefore, we consider this regression as an additional test of our main hypothesis, rather than the primary exercise.

Finally, we conduct another exercise to explore whether regional governors use national level elections to signal their loyalty to the ruling party. Instead of looking at the effect of timing of elections on electoral results, we check whether the absence of another chance drives governors' incentives to deliver better results for the ruling party. The idea is that if current national level elections are the last in the current governor's term, the governor must have stronger incentives to deliver good results than if he has another elections during his term, since this is the last chance for him to signal his loyalty. To do this, we estimate the following model (2) using fixed effects estimator:

$$VoteShare_{it} = \alpha_i + \alpha_t + \beta_1 LastSignal_{it} + \beta_z Controls_{it} + u_{it}, \quad (2)$$

where the dummy variable $LastSignal_{it}$ equals 1 if the current national election cycle (i.e. either parliamentary or the subsequent presidential elections) is the last one during the term of the governor of region i , and equals 0 if there is another national election cycle forthcoming during the term. If our hypothesis is valid, the coefficient on $LastSignal_{it}$ should be positive.

Results

Table 1 contains the results of estimation of several specifications of model (1) with *VoteShare* as the dependent variable (columns 1 and 2). All the specifications are estimated by fixed effects estimator and include regional economic variables⁴, governors' individual controls as well as year effects. In the first specification, we estimate model (1) using continuous measure (months) of the proximity of national elections, *Time*. To account for non-linearity of the relationship between *Time* and *VoteShare*, we allow for polynomial form of the variable of interest. We find that the polynomial terms of *Time* up to second (column (1)) or third (column (2)) degree give the most plausible results.

Table 1

Baseline model. Dependent variable: Favourite's share

	(1)		(2)		(3)		(4)	
Time	-0.368**	(0.154)	-0.977***	(0.329)	-0.880***	(0.297)	5.386***	(1.589)
Time ²	0.006***	(0.002)	0.031**	(0.012)	0.029**	(0.011)	-0.195***	(0.056)
Time ³			-0.000**	(0.000)	-0.000**	(0.000)	0.002***	(0.001)
Turnout					0.588***	(0.070)	1.230***	(0.183)
Turnout X Time							-0.098***	(0.026)
Turnout X Time ²							0.003***	(0.001)
Turnout X Time ³							-0.000***	(0.000)
Unemployment	-0.825***	(0.230)	-0.839***	(0.232)	-0.693***	(0.206)	-0.602***	(0.222)
CPI	-0.400	(0.332)	-0.333	(0.349)	-0.276	(0.328)	-0.441	(0.313)
Ln(GRP per capita)	-3.582	(5.802)	-2.410	(5.853)	-2.855	(5.435)	-3.260	(5.546)
Oil	0.256**	(0.122)	0.297**	(0.114)	0.290*	(0.147)	0.307**	(0.143)
Urbanization	0.460	(0.343)	0.549	(0.364)	0.710**	(0.326)	0.822**	(0.336)
Poverty	-0.382**	(0.154)	-0.418***	(0.156)	-0.458***	(0.167)	-0.428***	(0.159)
Seniors	-0.311	(1.002)	-0.239	(1.036)	0.770	(0.974)	0.989	(0.998)
Public servants	1.208	(2.532)	1.777	(2.578)	0.884	(2.618)	1.028	(2.836)
Elected	0.692	(1.464)	0.352	(1.483)	-1.026	(1.540)	-0.709	(1.528)
External	-2.587**	(1.267)	-2.393*	(1.301)	-3.141**	(1.333)	-3.354***	(1.178)
Term	2.730	(2.472)	1.547	(2.730)	1.619	(2.772)	2.611	(2.280)
Experience	-0.683	(0.622)	-0.438	(0.671)	-0.549	(0.667)	-0.790	(0.548)
Constant	98.578	(73.962)	78.913	(74.817)	9.377	(69.311)	-39.346	(73.889)
Year=2008	5.805***	(0.826)	5.658***	(0.861)	2.898***	(0.847)	3.275***	(0.794)
Year=2011	-18.082***	(3.248)	-18.829***	(3.247)	-17.739***	(2.971)	-19.197***	(3.170)
Year=2012	-2.458	(3.392)	-3.318	(3.367)	-5.100	(3.147)	-6.242*	(3.341)
R ² (within)	0.787		0.791		0.845		0.856	
R ² (between)	0.223		0.210		0.036		0.064	
R ² (overall)	0.015		0.004		0.050		0.027	
F	F(17,78)=40.60***		F(18,78)=40.12***		F(19,78)=56.61***		F(22,78)=58.03***	
Observations	313		313		313		313	

All models are estimated by Fixed Effects.

Robust standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Overall, our results show that the stage of the governor's term at which he faces national elections and the electoral results of the ruling party or ruling party candidate are strongly related: the effect of the term completion share ($Time_{ir}$) and its higher degrees are statistically significant. Based on our estimates, we construct linear predictions of *VoteShare* as a function of *Time* to illustrate the dynamics of the national elections results over a governor's term. The results are depicted on Figure 1, chart (a) for $Time^2$ and chart (b) for $Time^3$.

⁴Since presidential elections are held in March and parliamentary elections are held in December, we use previous year values of regional variables for presidential elections and current year values for parliamentary elections.

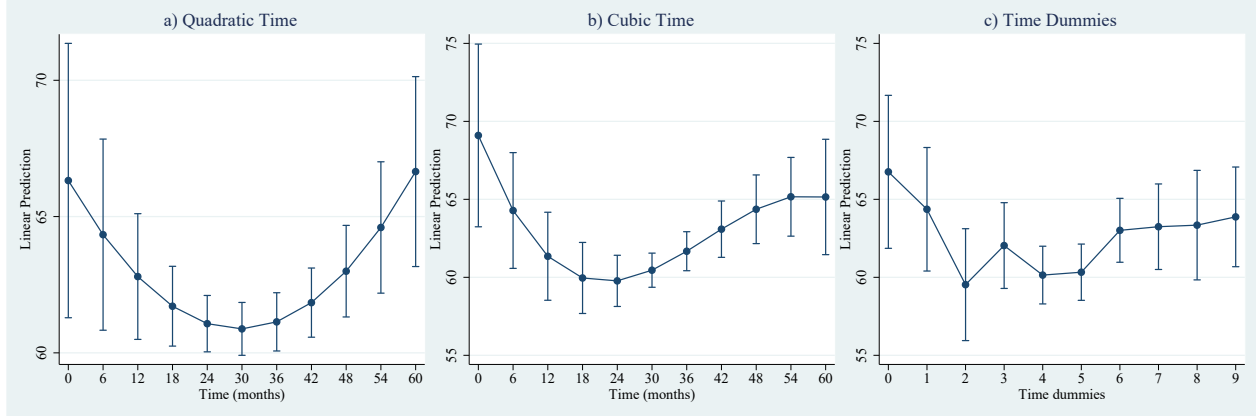


Figure 1. Effect of Time on favorite's vote share

Then, we use 10 time dummies (periods) instead of *Time* to measure the proximity of national election to a governor's expected end of term. The marginal effects from the estimation are illustrated on Figure 1, chart (c). One can see that both approaches (dummies and continuous measures) demonstrate a clear increase in favorite's vote share in national elections when a governor approaches the end of his term and thus the re-appointment decision.⁵ Specifically, if national elections and the end of a governor's term are within 1 year ($Time \in [0, 12]$, period dummies are 0–1) the favorite's share increases by about 6 percentage points above the national average in comparison to the middle of the term ($Time \in [24, 36]$, periods 4–5). Table 2 contains the contrasts after estimation of our main model with time dummies. Column (1) illustrates the difference between vote share for the favorite when national elections take place in the last 10% (6 to 0 months prior to the expiration of term) of a governor's term (Period 0) and the other periods. Column (2) contains similar comparison for the period of 12 to 6 months prior to the expiration of term.

Table 2

Contrasts of marginal linear predictions by Time dummies

	(1)		(2)	
	vs Period 0: 0-6 months		vs Period 1: 6-12 months	
Period 0: 0-6 months	–		2.400	(2.291)
Period 1: 6-12 months	–2.400	(2.291)	–	
Period 2: 12-18 months	–7.233***	(2.701)	–4.834***	(1.823)
Period 3: 18-24 months	–4.727*	(2.773)	–2.327	(2.209)
Period 4: 24-30 months	–6.620**	(2.893)	–4.220*	(2.314)
Period 5: 30-36 months	–6.435**	(3.022)	–4.035	(2.439)
Period 6: 36-42 months	–3.749	(3.078)	–1.349	(2.647)
Period 7: 42-48 months	–3.518	(3.415)	–1.119	(2.974)
Period 8: 48-54 months	–3.417	(3.138)	–1.017	(3.186)
Period 9: 54-60 months	–2.288**	(3.253)	–0.489	(2.994)
F (joint)	F(9,78)=2.28**		F(9,78)=2.28**	

Standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

⁵We estimate the model (1) with polynomials up to the third degree. The second degree polynomial for *Time* demonstrates a basic U-shaped relationship between *Time* and *VoteShare*, estimated as a linear prediction at means of all confounding variables. This relationship might be driven by the particular assumption on quadratic relationship between the variables. Once we use more flexible specifications (third degree polynomial and *Time* dummies), the U-shaped relationship around 48-60 months before the end of governors' terms flattens, while the increase in *VoteShare* closer to the term end, becomes clearer and more significant.

Exploring further the relationship between governors' time left in office and favorites' electoral results, we allow the effect of interest to vary across different levels of turnout. Interacting *Time* with regional turnout, we find strong evidence for this hypothesis: the increase in vote share for ruling party is stronger in regions with higher turnout. These results are presented in Table 1 (columns 3 and 4), and illustrated on Figure 2, for continuous measure of *Time* (left chart) and for the time dummies (right chart).

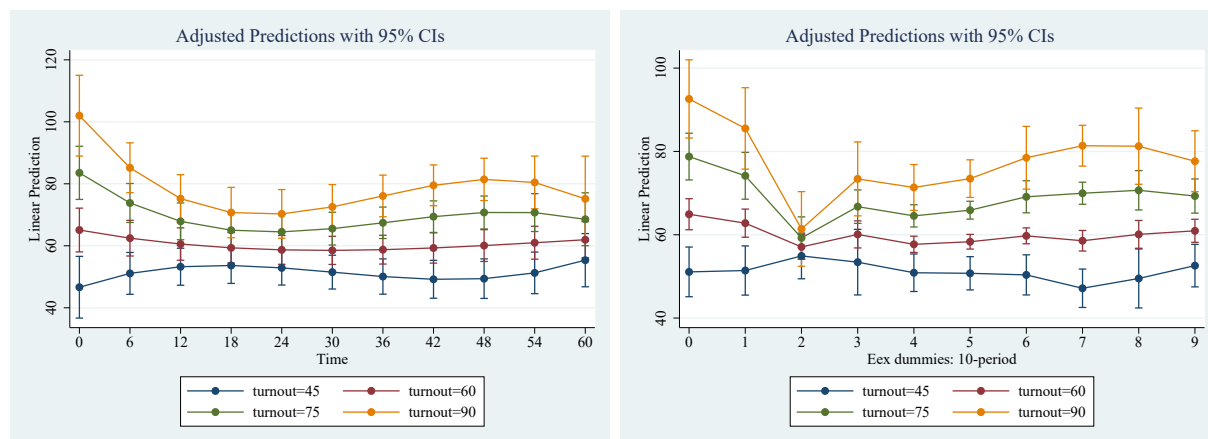


Figure 2. Effect of *Time* on favorite's vote share by *Turnout*

Finally, we check whether the absence of another chance to signal their loyalty, drives governors' incentives to deliver better results for the ruling party. We find that if the current election cycle is the last one during a governor's term, i.e. the governor will not have another chance to show his loyalty through national level elections results, the ruling party or presidential candidate receive about 3 additional percentage points to their vote shares. The results of the estimation are presented in Table 3

In addition to the variable of interest, there are several other variables which have a significant effect on the electoral results of the ruling party candidates in national elections. For almost all the specification we estimate (see Table 1 and Table 3), our results suggest that the ruling party or the ruling party candidates get significantly less votes in regions with higher unemployment and higher share of people living in poverty, as well as in regions where governors from outside as opposed to being local.⁶ In contrast, the ruling party tends to get more votes in oil rich regions.

4. Potential Explanations

Estimation Strategy

We find evidence that in the regions where governors approaching their term expiry date, the ruling party or the incumbent president get more votes in national elections. We

⁶We treat governor as local (vs. external) if he has a significant experience or personal ties associated with the region, such as experience in local government, business or other organizations. The governor might originally come from another region, but may have several years of professional experience in this region prior to taking the office.

Table 3

The effect of last signal. Dependent variable: Favourite's share

	(1)	
Last signal	3.348*	(1.798)
Unemployment	-0.686***	(0.239)
Ln(GRP per capita)	-3.265	(4.957)
Urbanization	0.162	(0.348)
Poverty	-0.425**	(0.166)
Seniors	-0.354	(1.051)
State employees, share (t)	0.401	(2.647)
Oil	0.252*	(0.131)
CPI	-0.315	(0.309)
Elected	1.476	(1.583)
External	-1.927	(1.556)
Term	5.946***	(1.913)
Experience	-1.454***	(0.484)
Year=2008	6.582***	(0.815)
Year=2011	-17.444***	(3.304)
Year=2012	-0.938	(3.434)
Constant	108.490	(68.875)
Log likelihood		-899
R ² (within)		0.7822
R ² (between)		0.0847
R ² (overall)		0.104
Observations		313

The model is estimated by Fixed Effects.

Robust standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

then try to identify the sources of these additional votes. We check three potential explanations for the observed pattern: mobilization of voters, electoral fraud, and budget cycles.

Our first potential explanation is increased governors' efforts to mobilize groups of voters who are likely to be pro-government such public employees or employees of large private companies with established relationships with local political elites (Frye et al., 2014, 2015). If this is the way the governors deliver better electoral results for "favorites", there must be a notable increase in voters' participation in regions where national elections are held closer to the governors' term expiry date. Hence, to check our hypothesis, we test whether regional voter turnout follows a trend similar to the trend in vote share found in the previous section. For this purpose, we estimate the following panel data model (3) using fixed effects estimator:

$$Turnout_{it} = \alpha_i + \alpha_t + \beta_1 Time_{it} + \beta_z Controls_{it} + u_{it}, \quad (3)$$

where $Turnout_{it}$ is the difference between turnout in region i in elections in year $t \in \{2007, 2008, 2011, 2012\}$ and national level turnout in the corresponding elections. The rest of the elements are the same as in model (1).

Our second potential explanation is that governors deliver extra votes through increased electoral manipulations. To test this explanation, we perform an analysis similar to the previous one using various measures of regional-level fraud as the dependent variable. We estimate the following model (4) with fixed effects estimator:

$$Fraud_{it} = \alpha_i + \alpha_t + \beta_1 Time_{it} + \beta_z Controls_{it} + u_{it}, \quad (4)$$

where $Fraud_{it}$ is measure of electoral fraud in region i in national level elections in year t . We use two fraud proxies. The first proxy is a popular forensic measure recently used, for example, by Moser and White (2017) and Bader and van Ham (2015), which is based on the degree the precinct level turnouts in a region deviate from the distribution which they should follow when elections are clean (Klimek, Yegorov, Hanel, & Thurner, 2012; Myagkov et al., 2009). We construct our first measure of regional electoral fraud labeled $FraudMoser$ as a share of "potentially fraudulent" precincts in the region. A precinct is considered as fraudulent if the turnout in it is greater than a national average turnout plus 1 standard deviation.

The second proxy is based on the conjecture that people, while manually correcting electoral results, tend to use more integer numbers than it should be when elections are clean. Such measures are used by, for example, Kalinin and Mebane (2012) and Kobak et al. (2016). We measure fraud as a share of precincts in which favorite's share is close to any integer percentage point +/- 0.05 percentage points. That is precincts with, for example, reported favorite's vote share in 49.95%–50.05% range are considered as suspicious. We label this variable as $FraudKobak$.

Indeed, in both cases the resulting numbers may not be sufficiently good proxies for actual fraud since they do not directly measure how much extra votes the manipulating candidate received due to fraudulent activities, but they are indeed highly correlated with them: the more fraud has occurred in elections, the higher values of the measures are likely to be. The presence of such correlation is sufficient for the purposes of our analysis.

Our third potential explanation is that in order to deliver better results for the favorite, governors may engage in sort of a cycle trying to please voters prior to elections. There is indeed a whole variety of specific actions governors may undertake for this purpose. They may provide direct transfers to certain groups of voters, affect their wages, introduce tax benefits, or simply buy votes. Assuming that many such actions may have direct or indirect effect on voters' income and income is one of the things that voters in Russia care a lot, we try to see whether there is any pattern in individual income across different regions of Russia that can be explained by governors' attempt to deliver more votes to the ruling party or its candidate. We thus estimate the following model (5):

$$Income_{it} = \alpha_i + \alpha_t + \beta_1 Time_{it} + \beta_z Controls_{it} + u_{it}, \quad (5)$$

where $Income_{it}$ is a measure of voters' income in region i in year t . To construct it, we use data from the Russia Longitudinal Monitoring Survey (RLMS). We calculate year-over-year changes in household average and median income per family member (inflation adjusted on the regional level), measured in each region. These measures are calculated based on household surveys, conducted during a 5-month window before elections, and one year before the elections.

Table 4

The effects of Time on the measures of turnout and fraud

	(1)		(2)		(3)		(4)		(5)		(6)	
	Turnout		Turnout		Fraud Moser		Fraud Moser		Fraud Kobak		Fraud Kobak	
Time	-0.454**	(0.188)	-0.582*	(0.243)	-0.067	(0.297)	0.134	(0.678)	-0.055	(0.048)	0.006	(0.096)
Time ²	0.006**	(0.003)	0.012	(0.009)	0.003	(0.004)	-0.005	(0.025)	0.001	(0.001)	-0.002	(0.004)
Time ³			-0.000	(0.000)			0.000	(0.000)			0.000	(0.000)
Unemployment	-0.247	(0.262)	-0.248	(0.263)	-0.571	(0.637)	-0.566	(0.637)	0.408**	(0.198)	0.409**	(0.198)
CPI	-0.099	(0.336)	-0.097	(0.336)	-0.023	(0.771)	-0.045	(0.745)	-0.019	(0.125)	-0.026	(0.126)
Ln(GRP per capita)	0.726	(4.633)	0.755	(4.655)	-5.189	(9.155)	-5.576	(9.184)	0.023	(1.808)	-0.096	(1.833)
Oil	0.011	(0.114)	0.012	(0.116)	0.332	(0.205)	0.319	(0.203)	0.062	(0.050)	0.058	(0.053)
Urbanization	-0.275	(0.390)	-0.273	(0.385)	0.474	(0.965)	0.444	(0.944)	0.364**	(0.182)	0.355**	(0.178)
Poverty	0.070	(0.149)	0.069	(0.150)	0.013	(0.334)	0.025	(0.325)	-0.068	(0.068)	-0.065	(0.067)
Seniors	-1.718	(1.080)	-1.716	(1.087)	-4.356*	(2.387)	-4.379*	(2.398)	0.023	(0.363)	0.016	(0.361)
Public servants	1.505	(2.305)	1.519	(2.284)	5.819	(5.059)	5.631	(4.893)	-3.267***	(1.197)	-3.324***	(1.191)
Elected	0.277	(1.648)	0.100	(0.270)	6.837*	(3.532)	6.950*	(3.585)	0.084	(0.716)	0.119	(0.724)
External	0.831	(1.224)	0.867	(1.228)	0.855	(2.439)	0.791	(2.440)	-0.246	(0.479)	-0.266	(0.486)
Term	4.828*	(2.223)	4.571*	(2.684)	1.103	(4.076)	1.494	(4.009)	-0.198	(0.953)	-0.079	(1.003)
Experience	-0.806	(0.670)	-0.740	(0.688)	-0.021	(1.129)	-0.101	(1.112)	0.011	(0.232)	-0.014	(0.242)
Constant	64.555***	(3.331)	65.428***	(3.762)	127.083	(141.996)	133.573	(144.266)	-16.834	(28.093)	-14.851	(27.810)
Year=2008	5.415***	(0.874)	5.375***	(0.879)	-0.273	(1.301)	-0.225	(1.285)	-0.200	(0.411)	-0.185	(0.420)
Year=2011	-4.768***	(1.633)	-4.815***	(1.658)	8.603	(9.549)	8.850	(9.687)	-1.292	(0.982)	-1.217	(0.958)
Year=2012	0.920	(1.756)	0.844	(1.799)	7.569	(9.663)	7.853	(9.852)	-1.610*	(0.956)	-1.524	(0.930)
R ² (within)	0.495		0.496		0.083		0.083		0.188		0.189	
R ² (between)	0.003		0.003		0.107		0.118		0.063		0.060	
R ² (overall)	0.049		0.049		0.103		0.113		0.024		0.022	
F	F(17,78)=19.56***		F(18,78)=18.71***		F(17,78)=1.48		F(18,78)=1.58*		F(17,78)=1.68*		F(18,78)=1.59*	
Observations	313		313		313		313		313		313	

All models are estimated by Fixed Effects.

Robust standard errors in parentheses, * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Although we deal with non-representative samples on the regional level, all efforts were made to survey the same households, in each wave. Therefore, we believe that our measures of changes in household income may capture short-term changes in regional policies prior to elections.

Results

The results of fixed effects estimation of the models (3)–(4) are presented in Table 4, columns (1)–(6).

Based on the estimations, we first find weak evidence of the relationship between *Time* and voter turnout. The relationship exists for both continuous measure *Time* and time dummies. On average, voter turnout is higher by about 6 percentage points in a region where the governor is left with less than 5 month in office in comparison to, for example, a region where the governor has 2 more years in office. These results are illustrated on Figure 3. Nevertheless, the increase in turnout cannot explain all the increase in the ruling party or candidate vote share found in the previous section. Even if one assumes that all the additional voters cast their votes for the ruling party, then, given "normal" turnout of about 64% and "normal" favorite's vote share of 60%, additional 6 percentage points to turnout would result in no more than 3 additional percentage points to the favorite's vote share, which is about half of the discovered increase.

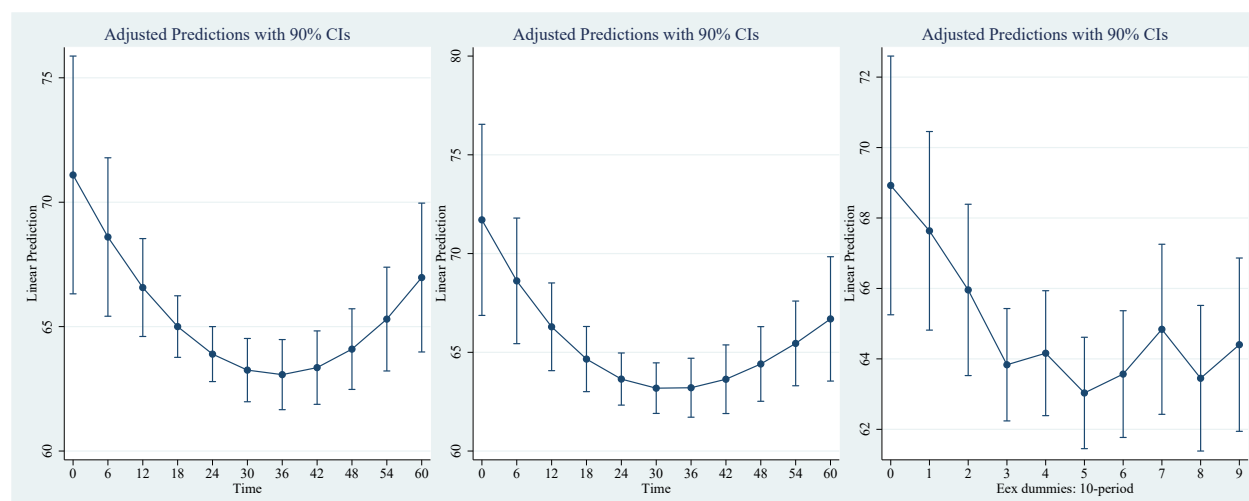


Figure 3. Effect of Time on turnout

Further, we check whether electoral manipulations can explain the rest of the additional votes for favorites. Estimating model (4), we find no evidence that approaching end of term affects manipulations regardless of the fraud measure we use.

Finally, we check whether there is any relationship between timing of elections with respect to regional political cycles and voters's income. We estimate model (5) using measures of average and median income. The results are inconclusive and sensitive to the definition of income (average or median). For both measures, we do not find a strong positive relations-

Table 5
Dependent variable: YoY change of disposable income

	(1)		(2)	
	YoY Average		YoY Median	
Time	0.005	(0.005)	0.019**	(0.009)
Time ²	-0.000	(0.000)	-0.001**	(0.000)
Time ³	0.000	(0.000)	0.000*	(0.000)
Unemployment	-0.018**	(0.008)	-0.028**	(0.012)
CPI	0.023***	(0.008)	0.014	(0.012)
Ln(GRP per capita)	0.008	(0.093)	-0.319	(0.231)
Oil	-0.002	(0.004)	-0.008*	(0.005)
Urbanization	-0.016	(0.010)	-0.004	(0.021)
Poverty	0.007	(0.006)	0.006	(0.010)
Seniors	0.003	(0.014)	-0.002	(0.024)
Public servants	0.076	(0.086)	-0.093	(0.148)
Elected	0.039	(0.027)	0.093**	(0.044)
External	0.026	(0.018)	0.007	(0.029)
Term	0.080***	(0.027)	0.130***	(0.043)
Experience	-0.010*	(0.006)	-0.018*	(0.010)
Constant	0.455	(1.149)	4.019*	(2.267)
Year=2008	0.022	(0.034)	0.006	(0.047)
Year=2011	0.170*	(0.085)	0.186	(0.121)
Year=2012	0.186*	(0.092)	0.207	(0.127)
R ² (within)	0.567		0.508	
R ² (between)	0.003		0.002	
R ² (overall)	0.028		0.033	
F(18,30)	27.44***		31.49***	
Observations	83		83	

All models are estimated by Fixed Effects.
 Robust standard errors in parentheses.
 * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

hip between *Time* and income which would explain additional votes in the last year before the end of a governor's term. The results of the estimation are presented in Table 5 and illustrated on Figure 4.

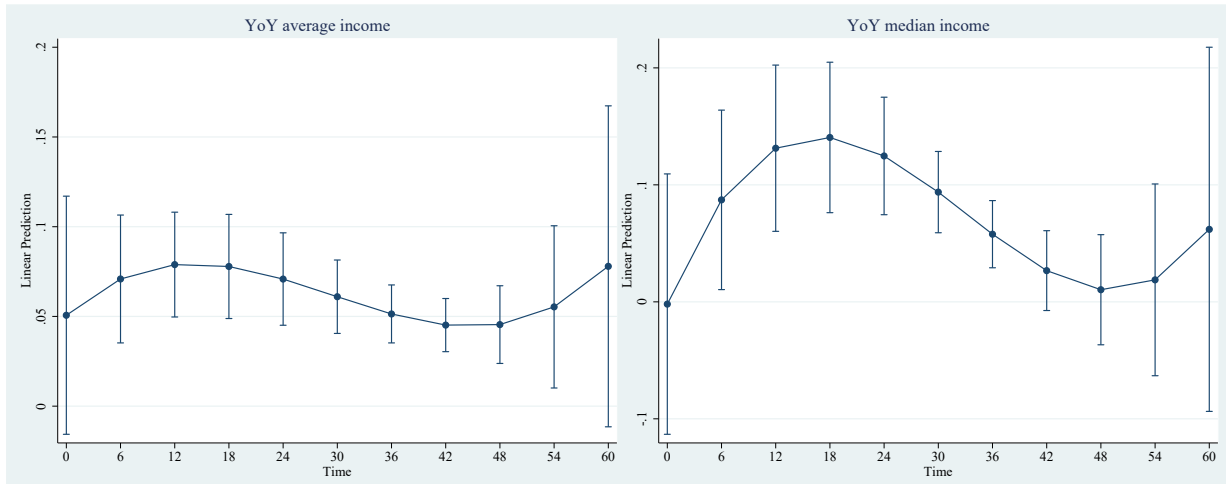


Figure 4. Effect of Time on YoY change in household disposable income (average, median)

5. Concluding Remarks

In this paper, we highlight the incentive mechanism of regional governors in Russia to signal their loyalty to the president closer to the end of their terms through the results of ruling party or candidate in national elections, and explore its possible channels. Our findings

strongly suggest the presence of the signaling through better electoral results, however the methods used to achieve them are still not entirely clear.

We establish that those governors approaching the end of their terms and facing a re-appointment decision deliver more votes to the ruling party or candidate in national level elections in their regions. Mobilization of ruling party supporters is used to deliver these extra votes but not exclusively: we find that voter mobilization cannot explain more than half of the additional votes for the ruling candidate. We further find no convincing evidence that electoral fraud and income-affecting tools can explain the rest of the votes.

There is a number of alternative potential explanations. First, it could be the case that governors use means of fraud that do not directly affect turnout such as limiting access of opposition candidates to media. Second, governors could simply exert effort to perform in publicly valued sectors prior to national elections, which may result in an increased support of the ruling party and favourite presidential candidates. We intend to test these and some other explanations in further research.

References

- Bader, M., & van Ham, C. (2015). What explains regional variation in election fraud? Evidence from Russia: a research note. *Post-Soviet Affairs*, 31(6), 514–528.
- Enikolopov, R., Korovkin, V., Petrova, M., Sonin, K., & Zakharov, A. (2013). Field experiment estimate of electoral fraud in Russian parliamentary elections. *Proceedings of the National Academy of Sciences*, 110(2), 448–452.
- Frye, T., Reuter, O. J., & Szakonyi, D. (2014). Political Machines at Work Voter Mobilization and Electoral Subversion in the Workplace. *World Politics*, 66(02), 195–228.
- Frye, T., Reuter, O. J., & Szakonyi, D. (2015). Hitting Them with Carrots: Voter Intimidation and Vote Buying in Russia. *SSRN Electronic Journal*.
- Gelman, V. (2008). Party Politics in Russia: From Competition to Hierarchy. *Europe-Asia Studies*, 60(6), 913–930.
- Gelman, V. (2010). The Dynamics of Subnational Authoritarianism: (Russia in Comparative Perspective). *Russian Politics and Law*, 48(2), 7–26.
- Kalinin, K., & Mebane, W. R. (2012). *Understanding electoral frauds through evolution of Russian federalism: The emergence of signaling loyalty* (SSRN Scholarly Paper No. ID 1668154). Rochester, NY: Social Science Research Network.
- Klimek, P., Yegorov, Y., Hanel, R., & Thurner, S. (2012). Statistical detection of systematic election irregularities. *Proceedings of the National Academy of Sciences*, 109(41), 16469–16473.
- Kobak, D., Shpilkin, S., & Pshenichnikov, M. S. (2016). Integer percentages as electoral falsification fingerprints. *The Annals of Applied Statistics*, 10(1), 54–73.
- Lukinova, E., Myagkov, M., & Ordeshook, P. C. (2011). Metastasised Fraud in Russia's 2008 Presidential Election. *Europe-Asia Studies*, 63(4), 603–621.
- Moser, R. G., & White, A. (2017). Does electoral fraud spread? the expansion of electoral manipulation in Russia. *Post-Soviet Affairs*, 33(2), 85–99.
- Myagkov, M. G., Ordeshook, P. C., & Shakin, D. (2009). *The forensics of election fraud: Russia and Ukraine*. Cambridge ; New York, NY: Cambridge University Press.
- Reisinger, W. M., & Moraski, B. J. (2013). Deference or Governance? A Survival Analysis of Russia's Governors Under Presidential Control. *Russia's Regions and Comparative Subnational Politics*.
- Reuter, O. J., & Robertson, G. B. (2012). Subnational Appointments in Authoritarian Regimes: Evidence from Russian Gubernatorial Appointments. *The Journal of Politics*, 74(04), 1023–1037.
- Rochlitz, M. (2014). Corporate raiding and the role of the state in Russia. *Post-Soviet Affairs*, 30(2-3), 89–114.
- Rochlitz, M. (2016). *Political Loyalty vs Economic Performance: Evidence from Machine Politics in Russia's Regions* (SSRN Scholarly Paper No. ID 2778007). Rochester, NY: Social Science Research Network.
- Skovoroda, R., & Lankina, T. (2017). Fabricating votes for putin: new tests of fraud and electoral manipulations from russia. *Post-Soviet Affairs*, 33(2), 100–123.
- Treisman, D. (2009). Elections in Russia, 1991–2008. *HSE Working Paper WP7/2009/06*.

Appendix Dataset description

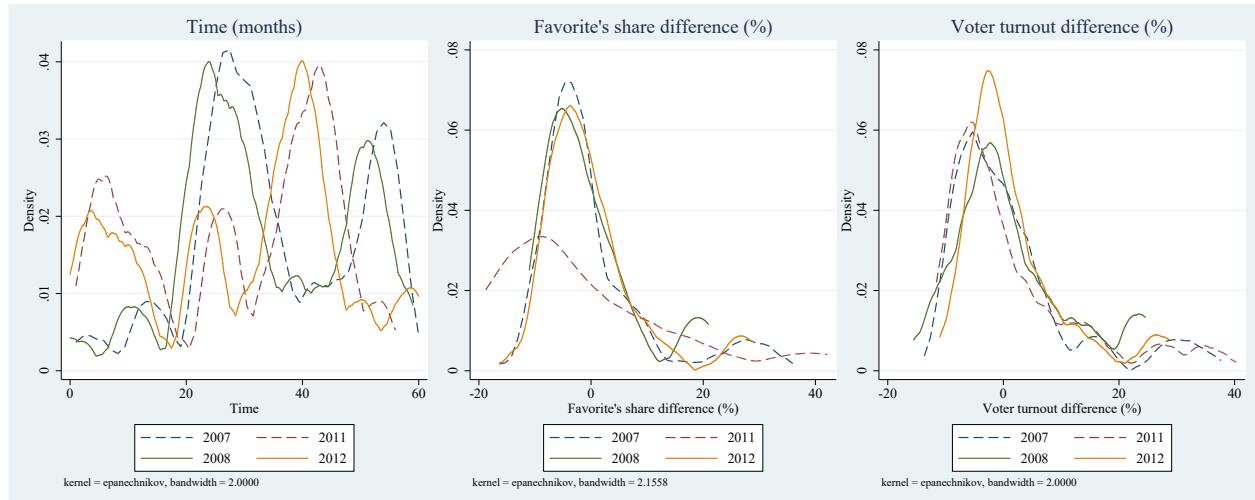


Figure A1. Kernel densities of electoral statistics by election years